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Aleem et al.

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(54) **EYE TRACKING METHOD AND SYSTEM
AND INTEGRATION OF THE SAME WITH
WEARABLE HEADS-UP DISPLAYS**

(58) **Field of Classification Search**

CPC G06F 3/013; G06T 7/73; G02B 27/0093
See application file for complete search history.

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G06F 3/01 (2006.01)
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CPC **G06F 3/013** (2013.01); **G02B 27/0093**
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(57)

ABSTRACT

A method of tracking a gaze position of an eye in a target space in a field of view of the eye over an eye tracking period includes performing a plurality of scans of the eye with infrared light within the eye tracking period. Each scan includes generating infrared light signals over a scan period and projecting the infrared light signals from a plurality of virtual light projectors to the eye to form a plurality of illumination areas on the eye. Reflections of the infrared light signals from the eye are detected for each scan. The gaze position of the eye in the target space is determined from the detected reflections of the infrared light signals for each scan.

23 Claims, 13 Drawing Sheets

